

# Claims

[c1] WHAT IS CLAIMED IS:

1. An optical system for projection display comprising:  
a light source for producing a light beam;  
an imaging system having a light valve and a projection lens; and  
a total reflection lens having a total reflection surface;  
wherein the total reflection lens receives the light beam from the light source and, by using the total reflection surface, reflects the light beam onto the light valve which reflects the light beam into the projection lens.

[c2] 2. The optical system of claim 1, wherein the total reflection lens further comprises a transparent surface facing to the light source.

[c3] 3. The optical system of claim 1, wherein the total reflection surface is a total reflecting coating.

[c4] 4. The optical system of claim 1, wherein the total reflection surface is a mirror.

[c5] 5. The optical system of claim 1, wherein an integrator is placed between the total reflection lens and the light source.

[c6] 6. The optical system of claim 1, wherein the total reflection lens is a concave mirror.